CENSUS OF AQUACULTURE

OMB No. 0535-0237

B.   COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

1.   Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection has been conducted previously, include the actual response rate achieved during the last collection.

The respondent universe for this census will consist of all farms identified in the 2017 Census of Agriculture with sales of aquaculture products; projected to be less than 6,000 operations. It is estimated that 10 percent of these operations will screen out and will not have to complete the report form. Response rate for remaining operations is estimated at 90 percent. Non-response follow-up will be by phone and personal interview. Response rate for the 2013 Census of Aquaculture was 90.2 percent.

2.   Describe the procedures for the collection of information including:
    • statistical methodology for stratification and sample selection,
    • estimation procedure,
    • degree of accuracy needed for the purpose described in the justification,
    • unusual problems requiring specialized sampling procedures

The population (6,000) will be divided into two groups, approximately 5,500 operations will be kept in the primary group and approximately 500 will be placed in the tagged group. The primary group (5,500) will be will be first contacted by mail using a pre-survey postcard announcement around December 3, 2018. This group will be contacted a second time by mail on December 17 with a copy of the questionnaire, a cover letter, an EDR instruction sheet and a return envelope. For non-respondents, a postcard reminder is scheduled for around January 3, 2019 with a follow up mailing around January 14, which will contain another copy of the questionnaire, cover letter and a return envelope. On or around February 4, NASS will begin attempting to contact the remaining non-respondents by either phone or personal visits.

The tagged group (500) were identified for special handling (i.e. operator has qualified for multiple surveys during that data collection time period; the operator has multiple facilities located in multiple states; the operator has requested a face to face interview for future surveys; etc.) and will be mailed a pre-survey postcard announcing the upcoming survey around December 17, 2018. The tagged records will then be done by either face to face interviews or by telephone starting in early January, 2019. All questionnaires will be keyed from paper at the National Processing Center (NPC) in Jeffersonville, IN.

A complete census of all operations reporting aquaculture activity on the 2017 Census of Agriculture will be attempted. Sampling of the respondent universe will not be employed.

When responses cannot be obtained from "Must" farms (extremely large operations), data will be imputed from the data reported on the 2017 Census of Agriculture report form, and information from similar farms which responded to the 2018 Census of Aquaculture survey.

Smaller and less influential aquaculture operations that fail to respond to the 2018 Census of Aquaculture will be accounted for by computing non-response weights and applying these weights to responding operations.

 Non-response weights will be computed using weighting cells that attempt to group operations with similar aquaculture characteristics together. The information used to form non-response cells will be available for all records in the respondent universe and will primarily be aquaculture sales information obtained on the 2017 Census of Agriculture.

Aquaculture operations that either did not respond to the 2017 Census of Agriculture, or did not receive a 2017 Census of Agriculture questionnaire, will not be part of the 2018 Census of Aquaculture respondent universe. To account for this possible under-coverage, coverage adjustments will be applied to the non-response weights of 2018 Census of Aquaculture respondents. These adjustments will be derived from 2017 Census of Agriculture coverage estimates of aquaculture operations.

The Census of Agriculture's aquaculture data is the most complete and current data we have available to inform the Census of Aquaculture. Only the reports that have positive aquaculture data will be used for any comparisons or weighting that may be done. We are using the Census of Agriculture's estimate of the number of aquaculture operations in the creation of the universe. We are calibrating the number of respondents on aquaculture to the Census of Agriculture estimate for the number of aquaculture operations. The Census of Aquaculture respondents will either be in scope – or out of scope.

Summing the Census of Aquaculture weights across those that are in scope will provide an estimate of the number of aquaculture operations in 2018 that were also involved with aquaculture in 2017.

Summing these weights across the aquaculture census respondents that are out of scope will provide an estimate of the number of farms that were aquaculture farms in 2017, but are now out of scope in 2018. The sum of the weights across these two groups will add up to the Census of Agriculture's estimate of the number of aquaculture operations in 2017- as it should.

Coverage adjustments will be done within groups of responding records. The fully adjusted (adjusted for both coverage and non-response) weights from the 2017 Census of Agriculture will be brought forward for all records in the 2018 Census of Aquaculture respondent universe.   Coverage adjustment cells will be created so that the operations in the same coverage adjustment cell are likely to have similar coverage rates. (Ideally, the coverage adjustment cells will be composed of records that have similar Census of Agriculture respondent capture rates.   This would imply that records within the same coverage adjustment cell would have similar weights with respect to their weight in the Census of Agriculture.) Within each coverage adjustment cell, the 2017 Census of Agriculture weights will be summed to provide a coverage adjustment target for the coverage adjustment cell. This target will be obtained using both 2018 Census of Aquaculture respondents and non-respondents alike. The sum of the non-response weights of 2018 Census of Aquaculture records within each coverage adjustment cell will also be computed. The coverage adjustment will be computed as the ratio of the target and the sum of the non-response weights. The resulting coverage-adjusted non-response weight sum will attain the coverage target for the cell.

All "must" case records will be placed in exclusive coverage adjustment cells. The coverage adjustment for "must" cases will be calculated in the same manner as described for "non-must" case records.

It is projected that relative standard errors (coefficients of variation or CVs) for major items of interest at the state level of about 5% will be achieved. CVs for states with only small amounts of aquaculture, and state level estimates for less common and/or minor items will likely be higher.

Apart from non-responding "must" farms (see above), NASS does not use data reported by farms indicating aquaculture sales from the 2017 Census of Agriculture to impute data values in the 2018 Census of Aquaculture. This is due to the somewhat volatile nature of this industry. For example, catfish take 18 months to mature from the egg stage to market size fish. Therefore, the number of fish that are marketed in one year can be greatly different the following year. Similarly, the number of mollusks or crustaceans that are caught and processed can change drastically from one year to the next due to weather, pollution, low water levels, disease or numerous other factors. These two surveys reference two different

years, and accordingly, the data should not be assumed to be highly correlated. Further, the Census of Agriculture asked aquaculture producers to report total value of sales for each species. In the Census of Aquaculture, we are asking producers to report greater detail by reporting sales by size class (i.e., broodfish, foodsize, stockers, fingerlings, fry, eggs, etc.) of each species. Because this level of information is not available in the Census of Agriculture, NASS cannot use these data from the Census of Agriculture to adjust for non-response to the Census of Aquaculture.

3. **Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling, a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.**

Extensive efforts will be used to maximize response to the census and thus reduce the extent of non-response adjustments to the survey. Prior to mail out, ads promoting the census will be placed in newspapers and industry journals and there will be additional publicity materials including a brochure, Power Point presentation, and press release, to be used and distributed by NASS field offices.

The operators will be asked to complete and mail the report form to NASS. Follow up procedures have been designed to maximize responses. Telephone calls and personal interviews will be made to non-respondents. When responses cannot be obtained from operations, data will be imputed using the 2017 Census of Agriculture form and information from similar farms that responded to the 2018 Census of Aquaculture.

Historically, State and regional growers associations have been very cooperative in promoting our surveys with their members. The published data from this survey has been vital to many of the decisions made concerning this industry. As a result the associations have been extremely useful in helping to promote this survey to all growers.

4. **Describe any tests of procedures or methods to be undertaken.**

A pre-test study to verify the content and the wording of the report form was conducted in 10 States (AL, FL, IN, LA, ME, MI, OH, NH, VA, and WA). The 23 pre-test cognitive interviews were conducted from November 2017 through January 2018, with approval under the Generic Clearance docket (0535-0248). The questionnaire performed quite well during this testing. Findings were reported and recommendations were made for minor changes to the questionnaire.

5. **Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit,**

contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.

The NASS survey administrator for the Census of Aquaculture is Julie Searle, Census Section, Census Planning Branch, Census and Survey Division; Branch Chief is Donald Buysse, (202) 690-8747. The administrator is responsible for coordination of OMB approval, questionnaires, data collection procedures, data processing, and field office support.

Questionnaire content is developed by the Livestock Branch, Survey Division; Branch Chief is Travis Averill (202) 720-3570.

State and national summaries are created by the Summary, Estimation, and Disclosure Methodology Branch in the Methodology Division, the Branch Chief is Jeff Bailey, (202)690-8141.

Sampling and imputation are conducted by the Sampling, Editing and Imputation Methodology Branch in the Methodology Division, the Branch Chief is Mark Apodaca (202) 690-8141.

Data collection is carried out by NASS Field Offices; Field Operation's Director is Jay Johnson (202) 720-3638.

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